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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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DORSEY & WHITNEY LLP
INTELLECTUAL PROPERTY DEPARTMENT
50 SOUTH SIXTH STREET
MINNEAPOLIS, MN 55402-1498

EXAMINER	
JONES, JUDSON	
ART UNIT	**PAPER NUMBER**
2834	

DATE MAILED: 07/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/057,833	HOCHHALTER ET AL.	
	Examiner	Art Unit	
	Judson H Jones	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-35 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-8,12-14,17-19,21-28,30 and 33-35 is/are rejected.

7)☒ Claim(s) 9-11,15,16,20,29,31 and 32 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 19 April 2002 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 0802 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Objections

Claim 16 is objected to because of the following informalities: The claim has been made dependent on itself. Appropriate correction is required. Furthermore, if claim 16 is made to be dependent on any claim other than claim 15, then "said second bearing" in claim 16 lacks antecedent basis.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 8 and 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Nagai et al. 5,747,896 A. Nagai et al. discloses an electrically powered actuator comprising an elongated housing including top cover 24 and side covers 26, 27 as described in column 2 lines 34-38, an electric motor 44, a rotation shaft 26 integrally formed with the motor output shaft as described in column 2 line 66 to column 3 line 2, and a coupling nut 60 connected with thrust member 56 which is in turn joined to slide blocks 54a, 54b as described in column 3 lines 29-51. In claim 1, the phrase "a thrust member concentric with ... said rotational shaft" is interpreted as meaning that the thrust member and rotational shaft share a common axis.

In regard to claim 4, see Nagai et al. column 3 lines 3-17.

In regard to claim 8, see Nagai et al. figure 7. The distal end connected to the elongated housing is shown as holding element 122 while the head cover is viewed as being the part of the motor housing closest to the bottom of the page.

In regard to claim 17, see bearing block 112 holding bearing 116 in Nagai et al. figure 7.

In regard to claim 18, see figure 7 where the threaded portion of shaft 16 acts as a bearing stop for bearing 116.

In regard to claim 19, see figure 7 where element 124 (a wave washer) is viewed as being a bearing plate.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nagai et al. in view of Ziv-Av 6,186,770 B1. Nagai et al. discloses the actuator but does not disclose a

planetary roller screw nut. In column 2 lines 25-33 Nagai mentions a ball screw. Ziv-Av teaches in column 5 lines 7-17 that ball screws can reduce frictional losses but require large assemblies to withstand large axial forces. Ziv-Av teaches that planetary roller screws provide an optimal combination of low friction, ability to withstand large axial forces and compactness. Since Ziv-Av and Nagai et al. are from the same field of endeavor it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized a planetary roller screw and planetary roller screw nut in the device of Nagai et al. in situations where the coupling nut would be subjected to large axial forces.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nagai et al. in view of Speller, Jr. et al. 6,357,100 B2. Nagai et al. discloses the actuator but does not disclose a thrust member having a proximal end connected with a coupling nut and with a free end having a fixture connection. Speller, Jr. et al. teaches in column 3 lines 38-52 that different attachments can be made between a coupling nut and a drive means for a tool and also mentions that his actuator can be used for installing various types of fasteners, including rivets, slugs, bolts and pins. While Speller, Jr. et al. does not say this, it would have been obvious at the time the invention was made for one of ordinary skill in the art to conclude that the different attachments would be useful for different types of fasteners. Since Speller et al. and Nagai et al. are from the same field of endeavor it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized a force tube as a thrust member including a proximal end connected to a coupling nut and a free end having a fixture connection end for driving a circular tool that fits a rivet head. (This is the alternative described in Speller, Jr. et al. column 3 lines 42-46.)

Claims 5 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagai et al. in view of Walton et al. 4,438,662 A. Nagai et al. discloses the actuator but does not disclose an output drive shaft extending through the encoder, the drive shaft having a manually rotatable end. Walton et al. teaches the concept of a manual override in column 1 lines 33-59. Since Walton et al. and Nagai et al. are from the same field of endeavor it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized a manual override in an electrically powered actuator for the purpose of providing control over the actuator in the event of an electrical failure.

Claims 6 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagai et al. in view of Walton et al. and Troutner 4,643,710 A. Nagai et al. as modified by Walton et al. discloses the actuator with the manual override but does not disclose a head cover with a access opening to provide access to the manually rotatable end. Troutner teaches a cover designed to provide protection by keeping the operator away from moving machine parts and to reduce opportunity for the operator to use the override in unwarranted circumstances. Since Troutner and Nagai et al. as modified by Walton et al. are from the same field of endeavor it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized a cover for an override device in order to reduce opportunity for the operator to use the override in unwarranted circumstances.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nagai et al. in view of Walton et al. and Troutner as applied to claim 6 and further in view of Everett 4,664,136 A. Nagai et al. discloses the actuator but does not disclose a removeable plug to access the manually rotatable end of an actuator. Everett teaches in column 3 lines 53-59 that a plug can be

provided in a housing to allow access to a part of the motor without having to remove the housing of the device in which the motor is used. Everett also teaches in figure 2 that the housing can be made to enclose all the parts of the motor and of the motor driven device. Since Everett and Nagai et al. as modified by Walton et al. and Troutner are from the same field of endeavor it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized a housing to enclose and protect the motor and motor driven devices and it further would have been obvious to have utilized a removeable plug to provide access to a part of the motor without requiring the disassembly of the housing.

Claims 12, 13, 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagai et al. in view of Powrozek 6,386,338 B2. Nagai et al. discloses the actuator but does not disclose an override rotation member connected to one of the rotation shaft or the drive shaft. Powrozek teaches in column 1 lines 28-38 that electrical motor driven actuators may fail and that manual override systems can be needed in the event of motor failure. Since Powrozek and Nagai et al. are from the same field of endeavor it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized an override system to provide an alternative means of moving an actuator driven device. Powrozek describes gear 80 as being an override gear in column 7 lines 24-29. The gear that meshes with gear 80 is also an override gear. The meshing gear is connected to one of the rotation shaft and drive shaft as shown in figure 2.

In regard to claims 13 and 24, both gear 80 and its meshing gear have a plurality of peripheral teeth as shown in figure 2 of Powrozek.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nagai et al. in view of Takizawa et al. 3,969,807 A. Nagai et al. discloses the actuator but does not disclose an access opening in alignment with a rotation member to provide manual rotation access to said rotation member. Takizawa et al. teaches in column 8 lines 14-28 that a slot can allow access to a lever which can be used to disengage the driving part from the driven part, thereby providing manual rotation access to the rotation member by using knob 53. Since Takazawa et al. and Nagai et al. are from the same field of endeavor it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized the slot in alignment with the rotation member of Takazawa et al. in the device of Nagai et al. in order to allow easy manual movement of the rotational member by disconnecting the driving part of the device from the driven part.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nagai et al. in view of Ineson et al. 5,334,897 A. Nagai et al. discloses the actuator but does not disclose how electrical connections are made between the power supply and the actuator. Ineson et al. discloses a dynamoelectric machine having end covers with power supply terminals inside the end covers as shown in figure 2 and as described in column 3 line 56 to column 4 line 4. Since Nagai et al. provides no information about how the power supply terminals are connected to the actuator and since Ineson et al. and Nagai et al. are from the same field of endeavor it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized end covers with recessed portions having electrical connector posts to facilitate external connection between the power supply and actuator. The electrodynamic machine of Ineson et al.

has further advantages in that the end cover configuration allows the machine to be sealed against water and other liquid materials.

Claim 23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagai et al. as modified by Powrozek as applied to claims 22 and 24 above, and further in view of Troutner 4,643,710 A. Nagai et al. as modified by Powrozek discloses the actuator with the manual override but does not disclose a head cover with a access opening to provide access to the manually rotatable end. Troutner teaches a cover designed to provide protection by keeping the operator away from moving machine parts and to reduce opportunity for the operator to use the override in unwarranted circumstances. Since Troutner and Nagai et al. as modified by Powrozek are from the same field of endeavor it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized a cover for an override device in order to reduce opportunity for the operator to use the override in unwarranted circumstances.

Claims 26-28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagai et al. in view of Swanson et al. 6,145,395. Nagai et al. discloses an actuator but does not disclose an impact relief assembly positioned between the rotation shaft and thrust assembly. Swanson et al. teaches using impact relief elements in column 4 lines 50-54 to provide protection against end of travel damage. Since Swanson et al. and Nagai et al. are from the same field of endeavor it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized impact relief elements in the actuator of Nagai et al. in order to prevent end of travel damage.

In regard to claim 28, see Nagai et al. column 5 lines 36-39. While Nagai et al. does not disclose wave washer 124 as being an impact relief means, wave washers act like compression springs. Therefore, a wave washer would inherently act as an impact relief means. In interpreting this claim, "bearing means" is viewed as including the elements holding the bearing in place.

Claims 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cecil 6,278,077 B1 in view of Nagai et al. Cecil discloses a welding apparatus with a welding gun attached to the output out an electric or pneumatic cylinder as described in column 6 lines 29-38. Cecil provides details on the control of the cylinder as the welding gun is positioned along the workpiece but does not provide details on the electric cylinder. Since Nagai et al. and Cecil are from the same field of endeavor it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized the actuator of Nagai et al. in the welding device of Cecil because the actuator of Nagai et al. has a restricted height or vertical dimension while keeping a high level of rigidity and is inexpensive as described in Nagai et al. column 1 lines 49-52.

Allowable Subject Matter

Claims 9-11, 15, 16, 20, 29, 31 and 32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. In the case of claim 16, this claim is allowable provided it depends on claim 15.

The following is a statement of reasons for the indication of allowable subject matter: The prior art of record does not disclose or teach a head cover including a first and second section where the second head section could be attached in a plurality of positions in

combination with the other features of claim 9. The prior art of record does not disclose or teach an access opening in alignment with a rotation member to provide manual rotation access to the rotation member in combination with the other features of claim 14. The prior art of record does not disclose or teach a first bearing between a coupling nut and a first portion of a housing and a second bearing between a thrust member and a second portion of a housing in combination with the other features of claim 15. The prior art of record does not disclose or teach a bearing plate connected to a bearing block by a plurality of threaded members in combination with the other features of claim 20. The prior art of record does not disclose or teach an impact relieving bearing means positioned between a rotation shaft and a thrust assembly in combination with the other features of claim 29. The prior art of record does not disclose or teach an impact relieving bearing means positioned between a rotation shaft and a thrust assembly in combination with the other features of claim 31.

Any inquiry concerning this communication should be directed to Judson H Jones whose telephone number is 703-308-0115. The examiner can normally be reached on 8-4:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 703-308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3431 for regular communications and 703-305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

JHJ